

Amendments to the Claims

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

Listing of Claims

1. - 16. (cancelled)

17. (currently amended) A ~~resilient lower extremity prosthesis~~ prosthetic foot comprising:

a foot keel extending in a longitudinal direction;

a resilient ankle;

an elongated, upstanding, resilient calf shank above the ankle;

wherein the ankle and calf shank are monolithically formed as a continuous resilient member, the shank extending upward in a substantially anterior facing convexly curvilinear manner over at least most of the height of the shank above the ankle, the ankle being anterior facing convexly curved and having extending upwardly anteriorly from a lower portion of the ankle secured to the foot keel and extending posteriorly to a lower end of the resilient member with a posterior terminal end, the resilient member flexing in the longitudinal direction during gait for storing and releasing energy to improve dynamic response of the ~~prosthesis~~ prosthetic foot in gait;

~~an at least one~~ artificial muscle provided on at least one of the foot, ankle and shank of the ~~prosthesis~~ prosthetic foot for storing energy during force loading of the prosthetic foot ~~prosthesis~~ in the active propulsion phase of a person's gait and in the later stages of stance-phase of gait releasing said energy to aid propulsion of the person's trailing limb and body;

wherein said at least one artificial muscle includes an artificial muscle extending between an upper portion of the calf shank and a lower part of the prosthetic foot.

18. (currently amended) The ~~prosthesis~~ prosthetic foot according to claim 17, wherein said at least one artificial muscle is preloaded in tension to increase the potential energy of the ~~prosthesis~~ prosthetic foot.

19. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, further comprising means for adjusting the energy storage capacity of the ~~prosthesis-prosthetic foot~~ by adjustably preloading the at least one artificial muscle in tension.

20. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 19, wherein said means for adjusting is selected from the group consisting of a cam, a pad and a bladder containing pressurized fluid.

21. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, ~~including wherein said at least one artificial muscle includes an~~ artificial muscle on the foot keel of the ~~prosthesis-prosthetic foot~~.

22. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 21, wherein ~~the foot includes a foot keel and said~~ artificial muscle on the foot keel connects plantar posterior and anterior portions of the foot keel.

23. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 21, ~~wherein the foot includes including~~ a foot shell over the lower extremity of the ~~prosthesis-prosthetic foot~~ and said artificial muscle on the foot keel connects plantar posterior and anterior portions of the foot shell.

24. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, ~~wherein said including an~~ artificial muscle which extends between and connects the ~~prosthesis-prosthetic foot~~ and a socket on a leg stump of a person's body when the ~~prosthesis-prosthetic foot~~ is in use.

25. (cancelled)

26. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 25~~17~~, wherein said at least one artificial muscle is provided on said resilient member.

27. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 26, wherein ~~17, wherein~~ an artificial muscle is also provided on said foot.

28. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, wherein said at least one artificial muscle is formed at least in part of a viscoelastic material selected from the group consisting of rubber and polymer.

29. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, further comprising a detector for detecting a force exerted by the ~~prosthesis-prosthetic foot~~ during said force loading of the ~~prosthesis-prosthetic foot~~, and means responsive to the detected force for adjusting the energy storage capacity of the at least one artificial muscle during said force loading as a function of the detected force.

30. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, wherein said at least one artificial muscle has a wider cross sectional area at an intermediate portion along the length of the muscle.

31. (currently amended) The ~~prosthesis-prosthetic foot~~ according to claim 17, wherein said at least one artificial muscle is formed at least in part of an electroactive polymer-based artificial muscle.